

Correct Answer Shown

Align Bottom and Left Edge

D-20

Mm1

1. How many side keys do graphs usually have?

1

☐

2

☐

3

☐

2. What are line graphs made from?

lines

☐

dots

☐

both

☐

3. Can a dot be halfway between 2 numbers on a line graph?

Yes

☐

No

☐

4. If a dot is halfway between 40 and 60, what number does the dot stand for?

45

☐

55

☐

50

☐

5. If a dot is halfway between 80 and 90, what number does the dot stand for?

80

☐

85

☐

95

☐

D-21

Mm2

1. If the side key says "Thousands of Bushels" and one dot on the graph is at 7, how do you read the number?  
☐ 7 bushels  
☐ 7 thousand bushels
2. If a dot is halfway between 500 and 600, what number does the dot stand for?  
500                      550                      650  
☐                      ☐                      ☐
3. If one dot is at 200 and another dot is at 800, what is the difference between the two dots?  
1000                      500                      600  
☐                      ☐                      ☐
4. If the side key says "Hundreds of Dollars", what does a dot at 4 on the graph mean?  
\$4                      \$40                      \$400  
☐                      ☐                      ☐
5. Is it possible to draw 3 line graphs on the same chart?  
Yes                      No  
☐                      ☐

D-22

Mm3

1. What is used to show information in a bar graph?

bars

☐

lines

☐

2. If a bar ends halfway between 20 and 30, what number does the bar stand for?

25

☐

20

☐

35

☐

3. In bar graphs the bars can go \_\_\_\_\_ the graph.

☐ either up and down or across☐ across☐ up and down

4. If the key says "Dollars Earned", what does a bar ending at 5 mean?

☐ 5 earned☐ \$50 earned☐ \$5 earned

5. If one bar ends at 75 and another bar ends at 25, what is the difference between the two bars?

60

☐

100

☐

50

☐



1. Do the bars of a bar graph always end on a line?

☐ Yes☐ No

2. Can more than one bar graph be combined in a chart?

☐ Yes☐ No

3. Do the bars in a bar graph always go up and down?

☐ Yes☐ No

4. If a bar ends halfway between 50 and 60, what does the bar stand for?

☐ 50☐ 52☐ 55

5. If one bar ends at 40 and another bar ends halfway between 20 and 40, what is the total?

☐ 80☐ 60☐ 70

1. What does a picture graph use to give information?

lines and dots

☐

bars

☐

pictures

☐

2. The \_\_\_\_ tells what the picture in the graph stands for.

color

☐

title

☐

key

☐

3. If a picture of one child stands for 300 students, how many students do 4 children stand for?

700

☐

1200

☐

304

☐

4. If a picture of one car stands for 100 new automobiles, how much does  $\frac{1}{2}$  of a car stand for?

50

☐

100

☐

200

☐

5. How much are six and one half snowflakes if one snowflake stands for 2 feet of snow?

 $6\frac{1}{2}$  feet☐ $12\frac{1}{2}$  feet☐

13 feet

☐

6. Which of these would be the best picture to show the number of sunny days in a year?

sun

☐

snowflake

☐

raindrop

☐

1. How many parts can a circle graph be divided into?
- ☐ only 4 or less
- ☐ only between 2 and 5
- ☐ as many as needed
2. What does the whole circle graph stand for?
- ☐ a part      ☐ the total
3. What must the fractional parts of a circle graph add up to?
- ☐ 100      ☐ 1      ☐ 10
4. If the parts of a circle graph are  $\frac{1}{3}$ ,  $\frac{1}{6}$ , and  $\frac{1}{6}$ , what is the missing part?
- ☐  $\frac{2}{3}$       ☐  $\frac{1}{6}$       ☐  $\frac{1}{3}$
5. If  $\frac{1}{4}$  of the total money spent was spent for food, how much of a circle graph would it take up?
- ☐  $\frac{1}{4}$       ☐  $\frac{1}{8}$       ☐ can't tell

D-100

1. Is estimating an exact way to measure?

☐ Yes ☐ No

2. Your stretch measures \_\_\_\_\_ your height.

☐ the same distance as  
☐ a shorter distance than  
☐ a longer distance than

3. Which way best measures the height of a doorway?

☐ pace ☐ stretch ☐ height

4. The length of your pace can be used to measure the \_\_\_\_\_ of things.

☐ height ☐ width ☐ weight

5. A normal pace is \_\_\_\_\_ and a step is \_\_\_\_\_.

☐ 5 feet ☐  $2\frac{1}{2}$  feet  
☐  $2\frac{1}{2}$  feet ☐ 5 feet



D-101

1. The span of most hands is about \_\_\_\_\_ long.
  - ☐ 3 inches
  - ☐ 5 inches
  - ☐ 8 inches
  
2. The span of two hands is about \_\_\_\_\_ long.
  - ☐ 6 inches
  - ☐ 16 inches
  - ☐ 10 inches
  
3. Your foot is \_\_\_\_\_ than a hand span.
  - ☐ longer
  - ☐ shorter
  
4. Your thumb is a good \_\_\_\_\_ measure.
  - ☐ three-inch
  - ☐ half-inch
  - ☐ one-inch
  
5. Which measure is the largest?
  - ☐ foot
  - ☐ 2-hand span
  - ☐ thumb

D-102

Choose the correct weights, in pounds,  
for these objects.

1. carton of butter  
☐ 3      ☐ 2      ☐ 1
2. bowling ball  
☐ 5      ☐ 16      ☐ 8
3. 6-pack of cola  
☐ 7      ☐ 8      ☐ 10
4. 1 quart of milk  
☐ 1      ☐ 4      ☐ 2
5. horse  
☐ 200      ☐ 1000      ☐ 2000
6. station wagon  
☐ 1000      ☐ 2000      ☐ 4000
7. motor scooter  
☐ 100      ☐ 200      ☐ 500
8. bicycle  
☐ 45      ☐ 15      ☐ 100

1. The long hand on a clockface is the \_\_\_\_\_.

☐ minute  
hand

☐ hour hand

2. The short hand is the \_\_\_\_\_.

☐ minute  
hand

☐ hour hand

3. What number does the minute hand point to when it is 6 o'clock?

☐ 12

☐ 3

☐ 6

4. What number does the minute hand point to when it is a quarter to 12?

☐ 12

☐ 3

☐ 9

5. What number does the minute hand point to when it is a quarter past 9?

☐ 9

☐ 12

☐ 3

6. When the hour hand goes around the clockface one time, how much time has passed?

☐ 12 hours

☐ 1 hour

☐ 24 hours

7. Which means 12 o'clock midnight?

☐ AM

☐ PM

8. Which means 12 o'clock noon?

☐ AM

☐ PM

9. When the minute hand goes around the clockface one time, how much time has passed?

☐ 1 minute

☐ 1 hour

☐ 1 day

1. How many minutes are in half an hour?

60

30

50

☐☐☐

2. How many minutes are in a quarter hour?

15

20

10

☐☐☐

3. When the minute hand moves from 2 to 6, how many minutes have passed?

15

20

40

☐☐☐

4. When the minute hand moves from 6 to 3 how many minutes have passed?

9

15

45

☐☐☐

5. Which is the correct way to write 25 minutes past 10?

25:10

10:25

☐☐

6. Which is the correct way to write 3 minutes after 7?

3:7

7:03

7:3

☐☐☐

7. What is 2:00 AM?

after noon

before noon

☐☐

8. What is 12:00 midnight?

after noon

before noon

☐☐

9. What is 12:00 noon?

PM

AM

☐☐



D-310

1 Which is about half past 7?

☐ 7:15      ☐ 7:27      ☐ 7:41

2 Which is about 12 noon?

☐ 12:10      ☐ 11:52      ☐ 11:00

3 At 33 minutes past 11, how many minutes to 12 is it?

☐ 27      ☐ 33

4 How do you write 15 minutes before midnight?

☐ 11:45 AM      11:45 PM ☐

5 How many hours difference is it between 7:30 AM and 5:30 PM?

☐ 12      ☐ 10      ☐ 2

6 How many hours difference is it between 2:00 AM and 11:30 AM?

☐  $9\frac{1}{2}$       ☐  $13\frac{1}{2}$ 

7 How many divisions does a 24-hour clock have?

☐ 12      ☐ 24

8 Which is at the zero mark on a 24-hour clock?

☐ noon      ☐ midnight      ☐ 1:00

9 When is 0900?

☐ afternoon      ☐ before noon

10 What time is 1630?

4:30 PM      4:30 AM      6:30 AM

☐      ☐      ☐

1. When it is 4 o'clock in New York, what time is it in Denver?

1:00

3:00

2:00

☐☐☐

2. When it is 1 P.M. Pacific Standard Time, in which city is it 3 P.M.?

Denver

Boston

Chicago

☐☐☐

3. Between which of these two cities would you set your watch forward one hour?

☐ Denver to Dallas☐ New York to Houston☐ Houston to New Orleans

4. Between which of these two cities would you set your watch backward one hour?

☐ Boston to Dallas☐ Los Angeles to Denver☐ Miami to New York

5. How many time zones did you learn about in the United States?

- 5

4

3

☐☐☐

D-318

Mm14

1. How long does it take the second hand to go around the clockface one time?

1 hour

☐

1 minute

☐

1 day

☐

2. How many seconds are in 2 minutes?

2

☐

120

☐

200

☐

3. When the second hand points to 6, how many seconds past the hour is it?

6

☐

60

☐

30

☐

4. Which sum is correct?

21 hr. 45 min.

+ 19 hr. 33 min.☐ 40 hr. 18 min.☐ 41 hr. 18 min.

5. What is this difference?

5 min. 15 sec.

- 3 min. 30 sec.☐ 1 min. 45 sec.☐ 2 min. 15 sec.

D-27

Mm15

1. When the parts of a circle graph are shown as percents, the parts must add up to \_\_\_\_\_.

100%

1

100

☐☐☐

2. If the total is \$500 and 50% is spent for food, how much is spent for food?

50

\$250

\$500

☐☐☐

3. If the parts shown on a circle graph are 25%, 20%, and 40%, what part is missing?

20%

10%

15%

☐☐☐

4. When the parts of a circle graph are shown as fractions, the parts must add up to \_\_\_\_\_.

1

100

10

☐☐☐

5. If the parts shown on a circle graph are  $\frac{3}{8}$ ,  $\frac{1}{8}$ , and  $\frac{1}{8}$ , what part is missing?

 $\frac{3}{8}$  $\frac{2}{8}$  $\frac{1}{8}$ ☐☐☐



D-240

1. If a circle graph is divided into 5 equal parts, how much does each part represent?

20%                      100%                      25%

☐                      ☐                      ☐

2. Does a circle graph show how much money is actually spent?

Yes

No

☐

☐

3. If more money is spent for recreation than for clothing, which will have the larger part of the circle graph?

recreation

clothing

☐

☐

4. If 25% is spent for records, and the total amount of money spent is \$2, how much is spent for records?

\$1

50¢

25¢

☐

☐

☐

5. If 80% is spent for food, and the total amount of money spent is \$50, how much is spent for food?

\$4

\$400

\$40

☐

☐

☐

6. If a divided bar graph is divided into 4 equal parts, how much does each part represent?

100%

20%

25%

☐

☐

☐

# MATHEMATICS

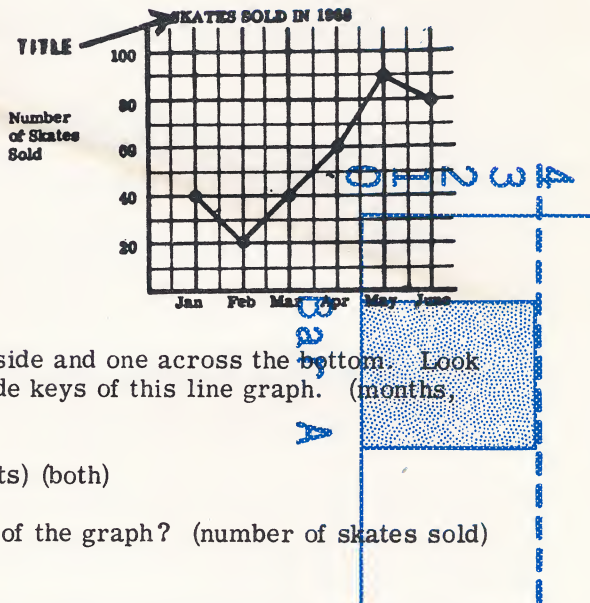
## Measurements

## series

# Mm

1

1. Information is sometimes presented in a line graph, like the one shown here. What is the title of this line graph? (number of skates sold) (skates sold in 1968)



2. A line graph has two side keys, one along the side and one across the bottom. Look at the arrows and decide which of these are the side keys of this line graph. (months, number of skates sold) (1968, skates sold)

3. What is the line graph made from? (lines) (dots) (both)

4. What is the name of the key across the bottom of the graph? (number of skates sold) (months)

5. Does a line graph have a key along the side and across the bottom of the graph? (yes) (no)

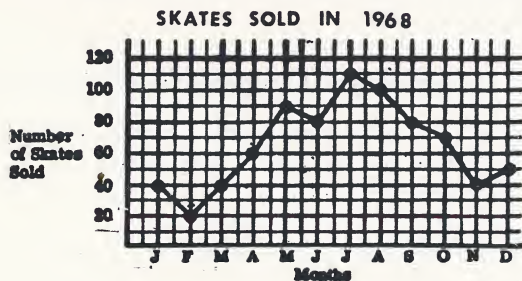
6. To find out how many skateboards were sold in January, find January on the graph. Follow the line above January. What do you find? (number) (dot)

7. The dot is across from 40. What was the number of skates sold in January? (20) (40) (60)

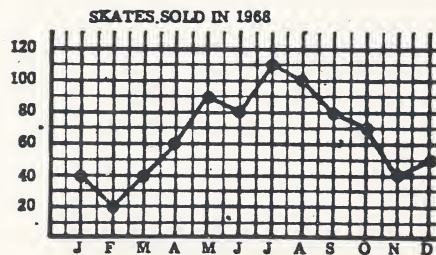
8. To find the number of skates sold in February, first find February on the graph. Follow the line above February to the dot. The number across from the dot is the number of skates sold in February. What is the answer? (20) (40) (60)

9. What was the number of skates sold in June? (60) (80) (100)

10. What was the number of skates sold in April? (20) (40) (60)
11. What was the number of skates sold in March? (20) (40) (60)
12. To find the month in which the most skates were sold, find the highest dot on the graph. When were the most skates sold? (February) (May) (June)
13. To find the month in which the fewest skates were sold, find the lowest dot on the graph. When were the fewest number of skates sold? (January) (February) (March)
14. To find out in what month 20 skates were sold, first find 20 on the graph. Next, follow the 20 line across to the dot. Follow the line from the dot down to the name of the month. In which month were 20 skates sold? (January) (February) (March)
15. To find out in what month 80 skates were sold, first find 80 on the graph. Next, follow the 80 line across to the dot. Follow the line from the dot down to the name of the month. In which month were 80 skates sold? (April) (May) (June)
16. In which month were 60 skates sold? (January) (February) (April)
17. When were 40 skates sold? (January and March) (March and April)
18. Find May on the graph. Follow the line up to the dot. Where is the dot? (halfway between 80 and 100) (across from 100) (across from 80)
19. What number is halfway between 80 and 100? (30) (60) (90)
20. So what was the number of skates sold in May? (80) (90) (100)
21. This is the line graph for the whole year with the title and side keys.



22. Here is the same graph without the labels.  
Which key should be across the bottom?  
(months) (number of skates sold)



23. Which key should be along the side? (months) (number of skates sold)
24. In which month were the most skates sold? (May) (July) (August)
25. How many skates were sold in July? (100) (110) (120)
26. When were 80 skates sold? (June and September) (May and June)
27. In which month were more skates sold? (April) (October)
28. In which month were the fewest number of skates sold? (November) (December)  
(February)

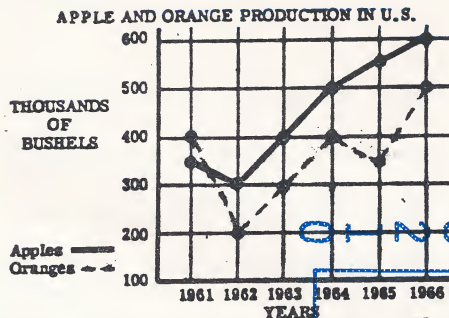


# MATHEMATICS

## Measurements series

Mm<sup>2</sup>

1. If we want to compare two things, we can draw two line graphs on the same chart. What is the title of this? (thousands of bushels) (apple and orange production in U.S.)



2. What does the dotted line on the graph stand for? (apples produced) (oranges produced)
3. What does the solid line on the graph stand for? (apples produced) (oranges produced)
4. What does the arrow point to? (side key) (title)

5. Since the side key says thousands of bushels, you must add the word thousand after each of the numbers on the left. The number 200 on the graph stands for 200 thousand. So the number 300 on the graph you would read as 300 thousand. How would you read the number 500 on the graph? (500) (500 thousand) (50,000)

6. The number 100 on the graph stands for one hundred thousand and is written with one and five zeros. Notice how 500 thousand is written. How is the number 600 on the graph written? (600,000) (6 thousand) (600)

7. When you want information on orange production, which line on the graph do you look at? (solid line) (dotted line)

8. To find the number of bushels of oranges produced in 1961, first find 1961 on the graph. Next, follow the line above 1961 up to the dot on the dotted line. The number across from the dot is 400. What was the orange production in 1961? (400 thousand bushels) (400 bushels)

9. What was the orange production in 1962? (200 million) (200,000) (200)

10. What does the solid line on the graph stand for? (apples produced) (oranges produced)
11. What was the apple production in 1964? (500 thousand) (400 thousand)
12. What was the apple production in 1966? (500, 000 bushels) (600, 000 bushels)
13. What was the orange production in 1963? (300, 000) (400, 000)
14. Find 1961 on the graph. Then follow the line above 1961 up to the solid line. Where is the dot? (between 300 and 400) (across from 300) (across from 400)
15. What number is halfway between 300 and 400? (325) (375) (350)
16. What was the apple production in 1961? (250 thousand bushels) (350 thousand bushels)
17. What was the orange production in 1965? (350, 000) (400, 000)
18. To find which year 500, 000 bushels of apples were produced, first find 500 on the graph. Then follow the 500 line across to the dot on the solid line. The year down from the dot is the year in which 500, 000 bushels of apples were produced. What is the answer? (1961) (1964) (1966)
19. In which year were 300, 000 bushels of oranges produced? (1962) (1963) (1965)
20. In which of these years were 400, 000 bushels of oranges produced? (1961 and 1963) (1961 and 1964)
21. The graph shows more apples were produced in 1966 than in 1965. To find out how many more, first find the number of bushels produced in each year. In 1966, 600, 000 bushels were produced. In 1965, 550, 000 bushels were produced. Now subtract. What is the difference? (50 bushels) (50, 000 bushels)
22. To find out how many more bushels of oranges were produced in 1966 than in 1961, first find the number of bushels produced in each year. Then subtract. What is the answer? (100, 000) (200, 000)
23. How many more bushels of oranges were produced in 1964 than in 1965? (50, 000) (500)
24. How many more bushels of oranges were produced in 1966 than in 1962? (3, 000) (30, 000) (300, 000)
25. To find out how many more bushels of apples than oranges were produced in 1963, subtract the number of oranges produced (300, 000) from the number of apples produced (400, 000). What is the answer? (50, 000) (100, 000) (200, 000)

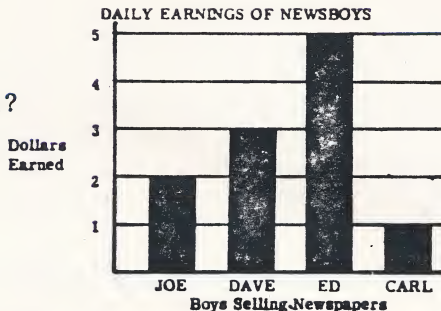
26. How many more bushels of apples than oranges were produced in 1965? (100,000)  
(150,000) (200,000)
27. In which year were more oranges than apples produced? (1961) (1962) (1965)
28. How many more oranges than apples were produced in 1961? (50,000) (100,000) (150,000)

# MATHEMATICS

## Measurements series

Mm 3

1. What is the title of this bar graph?  
(daily earnings of newsboys) (boys  
selling newspapers)



2. Is 'dollars earned' the name of the key across the bottom of the graph or along the side?  
(across bottom) (along side)

3. What is the name of the key across the bottom of the graph? (dollars earned) (boys  
selling newspapers)

4. Does a bar graph have a key along the side and across the bottom of the graph? (yes) (no)

5. How many boys are named in the bar graph? (2) (4) (8)

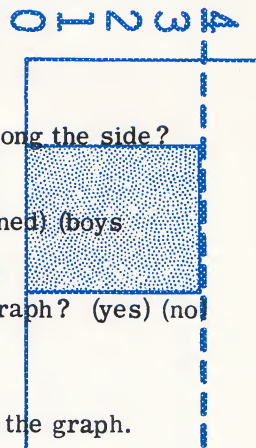
6. To find out how much money Joe earned, find Joe's name at the bottom of the graph.  
What is above Joe's name? (number) (bar)

7. What is used to show information in these graphs? (bar) (line)

8. Now go to the top of the bar over Joe's name and see which line the top of the bar  
reaches. What does this line mean? (\$2 earned) (\$1 earned)

9. To find out how much Dave earned, first find Dave's name at the bottom of the graph.  
Next, go to the top of the bar over Dave's name and follow the line to the 'dollars earned'  
side. How much did Dave earn? (\$2) (\$3) (\$4)

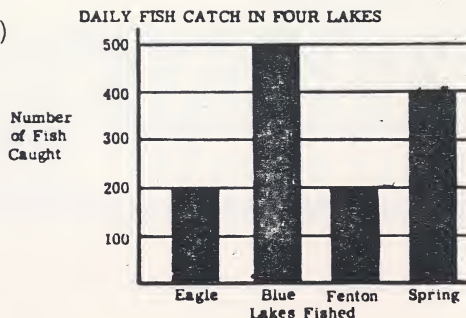
10. How much did Ed earn? (\$2) (\$4) (\$5)





11. How much did Carl earn? (\$1) (\$2) (\$3)

12. What is the title of this bar graph?  
(daily fish catch in four lakes) (number  
of fish caught)



13. Which is a key? (lakes fished) (both) (number of fish caught)

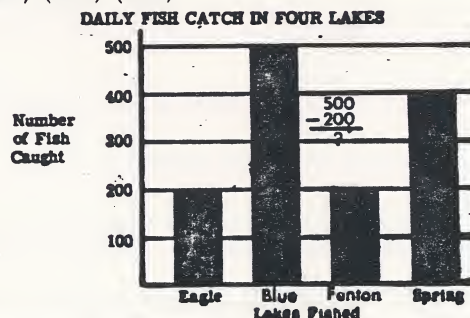
14. Refer to the "Daily Fish Catch in Four Lakes" graph which is shown on the first page to answer the next few questions. To find out how many fish were caught in Spring Lake, find the name Spring Lake on the graph. Next, go to the top of the bar over the name of the lake and follow the line the bar stops on. How many fish were caught in Spring Lake? (200) (400) (500)

15. What was the number of fish caught in Eagle Lake? (500) (400) (200)

16. What was the number of fish caught in Blue Lake? (500) (400) (200)

17. How many fish were caught in Fenton Lake? (400) (300) (200)

18. This bar graph can be used to find out how many more fish were caught in Blue Lake than in Fenton Lake. To do this, subtract the number of fish caught in Fenton Lake (200 fish) from the number caught in Blue Lake (500 fish). How many more fish were caught in Blue Lake than in Fenton Lake? (100) (200) (300)



19. How many more fish were caught in Spring Lake than in Fenton Lake? (100) (200) (300)

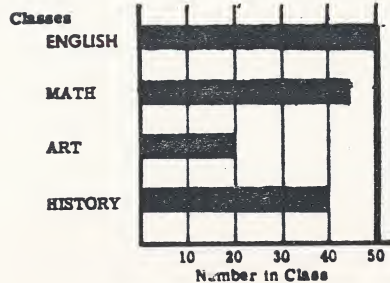
20. How many more fish were caught in Eagle Lake than in Fenton Lake? (0) (100)

21. To find out how many fish were caught in all four lakes, add the numbers for each lake together. What is the total number of fish caught in all four lakes? (1100) (1300) (1400)

22. What is the total number of fish caught in Blue Lake and Spring Lake? (900) (1000) (90)

23. How many fish were caught in Eagle and Fenton Lakes? (200) (300) (400)

24. In some bar graphs the bars go across instead of up and down. To learn the number of people in the English class, find the bar next to the name of the class. Follow the bar across to the line the bar ends on. Follow that line down to the number. What is the answer?  
(50) (30) (20)



25. How many people are in the art class? (20) (25) (40)

26. How many in the history class? (50) (45) (40)

27. How many in the math class? (50) (45) (40)

28. Which class has the largest number of people? (English) (Math) (History)

29. Which class has the least number of people? (English) (Art) (Math)

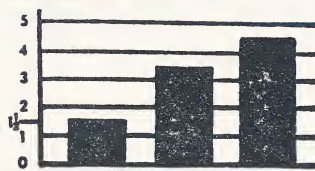
# Practice Folder

## MATHEMATICS

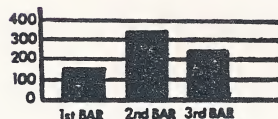
### Measurements series

Mm<sup>4</sup>

1. In some bar graphs, the bars do not go all the way to a line. The first bar here ends halfway between 1 and 2. It is at  $1\frac{1}{2}$ . The second bar ends halfway between 3 and 4. Where does it end? (2  $\frac{1}{2}$ ) (3  $\frac{1}{2}$ ) (4  $\frac{1}{2}$ )

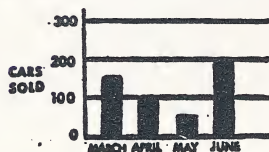


2. In this graph the lines are marked 100, 200, 300, and 400. The first bar ends halfway between 100 and 200. It ends at 150. The second bar ends halfway between 300 and 400. It ends at 350. At what number does the third bar end? (250) (300) (200)



3. What was the number of cars sold in Denton in March, 1967? (250) (200) (150)

CARS SOLD IN DENTON FOR MARCH-JUNE, 1967

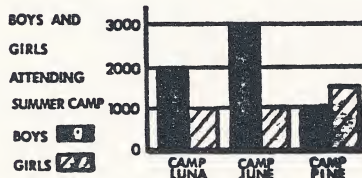


4. Referring to the graph above, what was the number of cars sold in April? (50) (100) (150)

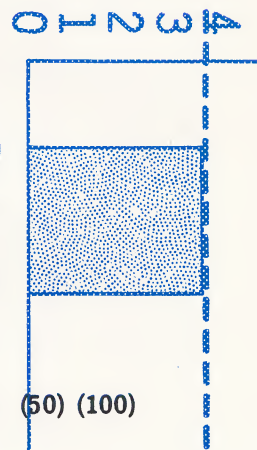
5. According to the graph, when were the most cars sold? (June) (March) (May)

6. What was the number of cars sold in May? (500) (50) (100)

7. Sometimes two bar graphs are put into one. According to this key, which color of bar stands for boys? (green) (yellow)



8. In the same graph, which color bar stands for girls? (green) (yellow)



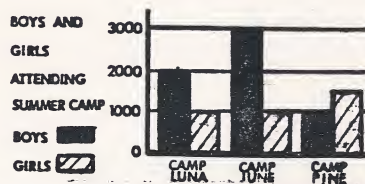
9. To find out how many boys attended summer camp at Camp Luna, find the name Camp Luna. Next, find the **bar** that stands for boys and follow the bar to the top. Then follow the line to **the side**. What is the answer? (1000) (2000) (2500)

10. How many girls attended Camp Luna? (2000) (1000) (500)

11. To find the total number of boys and girls attending Camp Luna, add the two numbers together. 2000 plus 1000 equals 3000. What was the number of boys and girls attending Camp June? (5000) (4500) (4000)

12. How many girls attended Camp Pine? (1500) (2500) (3500)

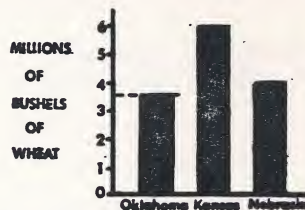
13. How many boys attended Camp Pine? (1000) (2000) (3000)



14. What was the total number of boys and girls attending Camp Pine? (1500) (2000) (2500)

15. In some bar graphs the lines are left out. But you still read the graph the same way. There are two ways to check to be sure which number is across from the top of the bar:  
 1) Draw a straight line from the top of the bar to the number. 2) Lay a ruler or piece of paper across the top of the bar to see where it crosses the numbers.

16. To find how many bushels of wheat were grown in Oklahoma, draw a straight line from the top of the bar across to the numbers. The line is halfway between 3 million and 4 million. What was the number of bushels? (3 1/2) (3) (4 1/2)

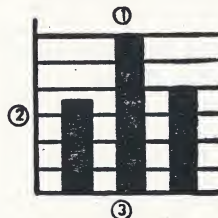


17. How many bushels of wheat were grown in Kansas? (5) (6) (7)

18. What was the total number of bushels of wheat grown in all three states? (13 1/2) (13) (14)

19. What shows information on a bar graph? (height of bar) (color of bar) (lines)

20. In which positions will side keys be found? (1 and 2) (1 and 3) (2 and 3)

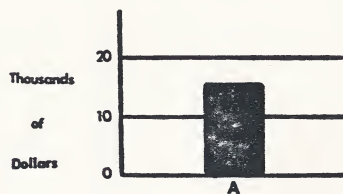




21. Do bars in a graph always go up and down the graph? (yes) (no)

22. Are the lines ever left out in bar graphs? (yes) (no)

23. What does bar A show?  
(\$10) (\$15,000) (\$15)





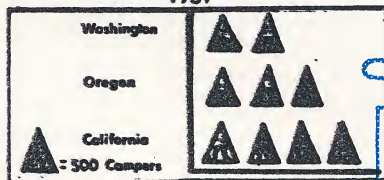
# MATHEMATICS

## Measurements series

Mm 5

1. Information is sometimes presented in picture graphs. A picture graph uses pictures to give information. What is the title of this picture graph? (a picture of one tent equals 500 campers) (Campers in National Parks in August, 1967)

Campers in National Parks in August, 1967



2. The key tells what the picture in the graph stands for. The key to this picture graph tells that each picture of a tent stands for how many campers? (500) (1000)

3. To learn what the pictures in a picture graph stand for, what do you read? (title) (key)

4. The key shows that the picture of one tent stands for 500 campers. What does the picture of two tents stand for? (1000) (200) (2)

5. Which of these is the list of states given on the picture graph? (California, Washington, Oregon) (Washington, Oregon, Texas)

6. To find the number of campers in a state, count the number of pictures beside the name of the state. Washington has two pictures beside it. Multiply two times 500. How many campers were in National Parks in Washington in August, 1967? (1000) (500)

7. How many campers were in National Parks in Oregon in August, 1967? (500) (1500)

8. How many campers were in National Parks in California in August, 1967? (1500) (2000) (2500)

9. Where were the most campers? (Washington) (Oregon) (California)

10. What is the title of this picture graph?  
(one rain drop equals 10 inches of rain)  
(Yearly Rainfall for 1964-1966)

Yearly Rainfall for 1964 - 1966

	1964	1965	1966
New Orleans	△△△△	△△△△△	△△△△
San Francisco	△△△	△△△	△△
Tucson	△	△△	△

11. How many inches of rain does each drop stand for? (10) (5) (20)

12. To find out how much rain fell during a certain year, read down the graph. In which direction do you read to find out how much rain fell in a certain city during different years? (down the graph) (across the graph)

13. To find out how many inches of rain fell in Tucson in 1964, first find the year 1964 on the graph. Next, read down the graph to Tucson. What was the rainfall in Tucson in 1964? (15 inches) (10 inches) (20 inches)

Yearly Rainfall for 1964-1966

	1964	1965	1966
New Orleans	△△△△	△△△△△	△△△△
San Francisco	△△△	△△△	△△
Tucson	△	△△	△

14. What was the rainfall in New Orleans in 1964? (40 inches) (30 inches) (20 inches)

15. How many inches of rain fell in New Orleans in 1965? (40 inches) (50 inches) (20 inches)

16. How many inches of rain fell in San Francisco in 1965? (10 inches) (20 inches) (30 inches)

17. Which city, in 1965, had the most rain? (Tucson) (San Francisco) (New Orleans)

18. Which city had the least amount of rain in 1966? (San Francisco) (Tucson) (New Orleans)

19. Pictures on a graph are sometimes cut in half, like this. One half of a drop of water equals one half of a whole drop. So one half of a drop equals one half of 10 inches or 5 inches of rain. What was the rainfall in New Orleans in 1966? (30 inches) (35 inches) (40 inches)

$$\triangle = 1/2 \triangle$$

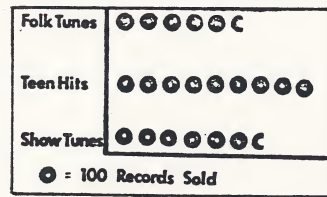
$$\triangle = 1/2 (10 \text{ in.}) = 5 \text{ in. of rain}$$

New Orleans in 1966?

$$\begin{aligned} \triangle + \triangle + \triangle + \triangle &= ? \\ 10 + 10 + 10 + 5 &= ? \end{aligned}$$

20. What is the title of this picture graph? (Record Sales in January, 1967) (One record equals 100 records sold)

Record Sales in January, 1967



21. What does each picture of a record stand for? (100) (150) (200)
22. What does a picture of half of a record stand for? (100) (50)
23. Which type of records are shown? (teen hits, folk tunes, classical) (folk tunes, teen hits, show tunes)
24. What type of record had the fewest sales in January, 1967? (folk tunes) (teen hits) (show tunes)
25. What type of record had the most sales? (folk tunes) (teen hits) (show tunes)
26. What was the number of folk tune records sold in January? (500) (550) (600)
27. What was the number of teen hit records sold? (600) (900) (300)
28. What was the number of show tune records sold? (650) (600) (750)
29. Which of these correctly describes a picture graph? (pictures give information) (writing gives all the information)
30. What part of a picture graph tells what the picture stands for? (key) (title)



# MATHEMATICS

## Measurements series

# Mm

6

1. Another kind of graph is the circle graph. From the name of this graph can you tell that a circle graph is square, round, or oval? (square) (round) (oval)

2. This is a circle graph. Is it divided into 4 parts? (yes) (no)



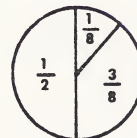
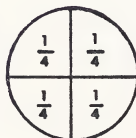
3. Can a circle graph be divided into parts? (yes) (no)

4. When all the parts of something are put together, they make up the whole. Which of these describes the whole of something? (at least 3 parts) (all of the parts)

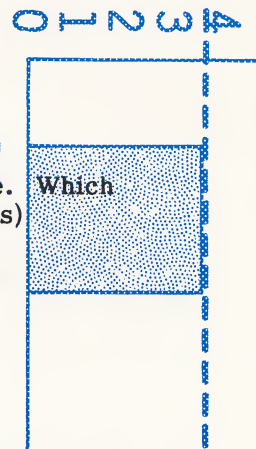
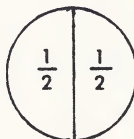
5. The circle graph is used to show the parts that make up the whole of something. What does this whole circle stand for? (part of the money spent) (all of the money spent)



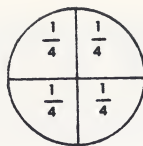
6. To show the parts that make up the whole, we'll divide the circle into parts. Which of these circles has been divided into equal parts? (A) (B)



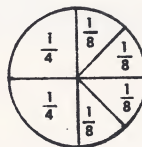
7. What is each part of this circle? (1/2 of the whole circle) (all of the circle)



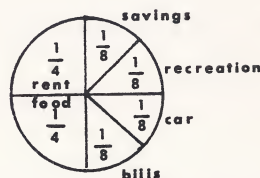
8. What is each part of this circle?  
(1/2) (1/4)



9. What are the parts of this circle labeled?  
(1/4 and 1/8) (3/4 and 1/2)



10. This circle graph shows how income is divided. Which is correct? (1/8 of the income is to be used for food) (1/4 of the income is to be used for rent)



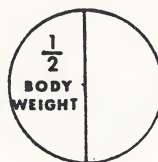
11. What part of the income is to be used for the car? (1/4) (1/8)

12. Let's show total income in a circle graph. We divide the income into its parts, and put each part in the circle graph. 3/4 of the income is from wages. So we mark off 3/4 of the circle and label it wages.



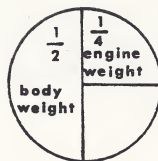
13. 1/8 of the income is from a second job. So we mark off 1/8 of the circle for the second - job pay. And 1/8 of the income is from interest paid on a savings account. How do you show this part of the income? (by marking off 1/8 of the circle) (by marking off 3/4 of the circle)

14. We can show the size of the parts of a circle by fractions. In this example, the whole circle is the total weight of the car. We'll divide the total weight of the car into parts and show the parts on the circle graph. The weight of the body of the car is 1/2 the total weight. So we mark off 1/2 of the circle for body weight.

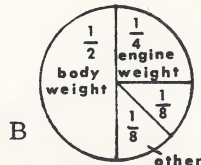
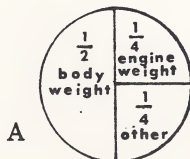




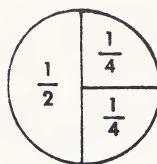
15. The weight of the engine is  $\frac{1}{2}$  the total weight. So we mark off  $\frac{1}{4}$  of the circle for engine weight.



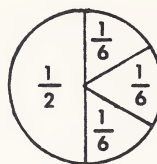
16. The remaining  $\frac{1}{4}$  is the weight of everything else in the car. Which circle is marked correctly for this example? (A) (B)



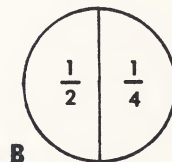
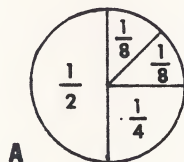
17. Whenever fractions stand for the parts of a circle, the fractions must add up to 1. 1 stands for the whole circle. In this circle the 3 fractions are  $\frac{1}{2}$ ,  $\frac{1}{4}$  and  $\frac{1}{4}$ . To add fractions, the numbers below the line must be the same. Change  $\frac{1}{2}$  to  $\frac{2}{4}$ , then add  $\frac{2}{4} + \frac{1}{4} + \frac{1}{4} = 1$ . Which is correct? (All fractions add up to 1) (Divided into equal fractions)



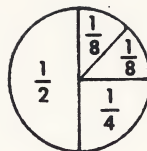
18. The parts of this circle graph are  $\frac{1}{2}$ ,  $\frac{1}{6}$ ,  $\frac{1}{6}$ , and  $\frac{1}{6}$ . After we change  $\frac{1}{2}$  to 6ths and add the parts, we get 1. What did we change  $\frac{1}{2}$  to? (1) ( $\frac{1}{6}$ ) ( $\frac{3}{6}$ )



19. The parts of one of these graphs do not add up to 1, so it is labeled incorrectly. Which one is wrong? (A) (B)



20. In order to add up the parts of this circle graph, the numbers below the line must be the same. We'll change  $\frac{1}{2}$  to  $\frac{4}{8}$ . What do we change  $\frac{1}{4}$  to? ( $\frac{1}{2}$ ) ( $\frac{2}{4}$ ) ( $\frac{2}{8}$ )



21. What do these parts add up to? (1) ( $\frac{1}{4}$ ) ( $\frac{1}{8}$ )

$$\frac{4}{8} + \frac{2}{8} + \frac{1}{8} + \frac{1}{8} = ?$$

# MATHEMATICS

## Measurements

## series

Mm<sup>7</sup>

1. Often it can be useful to guess how large something is. You may want to guess how much it weighs or how long it is. Guessing the size of something is called estimating. These lessons will teach you how to estimate. You will use yourself as a measure and compare things to objects whose length or weight you know.

2. Which of these methods would give the most exact measure? (using a ruler or a scale) (estimating) (comparing to something you know)

3. Estimating is not the same as using a ruler or a scale. It is used to get a close measurement, not an exact measurement. Is estimating (1) the most exact way to measure, (2) a good way to get an accurate measurement, (3) neither? (1) (2) (3)

4. Many times you may want to estimate or guess the length or weight of something. The best way is to compare it to something you know the length or weight of. Complete this sentence. "Comparing to something you know the length of is a good way to \_\_\_\_." (guess how much something weighs) (guess how long something is)

5. Complete this sentence. "To guess how long something is, \_\_\_\_." (1) look for a ruler. (2) ask a friend who is good at guessing. (3) compare it to something you know the length of. (1) (2) (3)

6. Now complete this sentence. "Comparing to something whose height or weight you know \_\_\_\_." (1) is the best way to estimate. (2) gives an exact measure. (1) (2)

7. How would you estimate the weight of a football? (Put it on a scale) (Compare it with the weight of something you know)

8. Which of these is correct? (1) Use a ruler or a scale to estimate. (2) Estimating is less accurate than using a ruler or a scale. (3) Comparing weights is a very accurate way of measuring. (1) (2) (3)

9. Here are some kinds of measures of distance. Your height, or how tall you are; your stretch, or how far you can stretch your arms out to the side; and your pace, or how far you step. How many kinds of measure are mentioned here? (3) (2) (1)

ONWA

to

A

10. Which would help you measure the largest things? (your height) (your pace)
11. What can your height be used to measure? (How much something weighs) (How high something is)
12. What is your stretch? (1) How far you can stretch your arms out to the side.  
(2) How long a step you can take. (1) (2)
13. Your stretch measures about the same distance as your height. If a person is about six feet tall, how can he estimate a six foot distance? (1) By stretching his arms out to the side (2) By raising his arms over his head (1) (2)
14. Which of these is correct? (1) Your height is measured by how many paces you can take in a certain amount of time. (2) You can use your stretch to measure how wide something is. (1) (2)
15. Most adults are between 5 and 6 feet tall. Since the top of most doorways is higher than most people stand, you can estimate that doorways are more than 6 feet high or 10 feet high? (6 feet high) (10 feet high)
16. Most adults are 5' - 6' tall. Most doorways are 6' - 7' high. What can you tell from these two statements? (1) You know that most doorways are no higher than most people stand. (2) You can guess that most doorways are 6" - 8" higher than most people stand. (1) (2)
17. Which of these is the best estimate of the height of an ordinary doorway? (6') (6'8") (7'6")
18. How can you best estimate the height of a doorway? (1) By checking against your own height. (2) By stretching your arms out from your sides. (1) (2)
19. Which of these measures was used to estimate the height of the doorway? (weight) (height) (stretch)
20. The width of something is how wide it is from side to side. You can estimate that most doorways are about how wide? (2') (2 1/2' - 3') (5')
21. Which of these measures could best be used to estimate the width of most doorways? (ruler) (height) (stretch)
22. Can the width of a car be best estimated by using your stretch or your length? (stretch) (length)
23. Complete this sentence. "The width of something is \_\_\_\_\_. " (how tall it is) (how wide it is from side to side)



24. What is the length of a pace? (your stretch) (how far you step) (how far you run)

25. The length of your pace can be used to measure the width of things. Complete this sentence. "The length of your pace \_\_\_\_\_." (is a good way to measure how wide certain things are) (can be used in place of your height to estimate widths)

26. A pace is often used for measuring distances on the ground. A pace is defined as a double step. A normal pace is 5 feet so a step is one half of that or 2 1/2 feet. If you started with your feet together and stepped off with your left foot, this would be one step. The distance between where you started and where your right foot hit the ground again would be a double step or a pace.

27. If you are going to measure distances, you need to mark off 5 feet and 10 feet and practice. Which is correct? (1) Your pace should be 3' long. (2) If you practice, you can step off 5' every time your right foot hits the ground. (1) (2)

28. When you pace off a distance, take a normal step. You will not make a good estimate if you take a long step. Why should you practice a normal step? (1) So that your estimate will be fairly accurate. (2) So that you can take the fewest possible steps. (1) (2)

29. Which is pacing correctly? (A) (B)



30. When you measure by pacing, would you always cover 5 feet with each step or with every other step? (with each step) (with every other step)

31. Which of these could be estimated by the length of a pace? (1) the length of a driveway. (2) the width of a book. (1) (2)

32. Which of these could best be used to estimate the length of a car? (your height) (your pace)



# MATHEMATICS

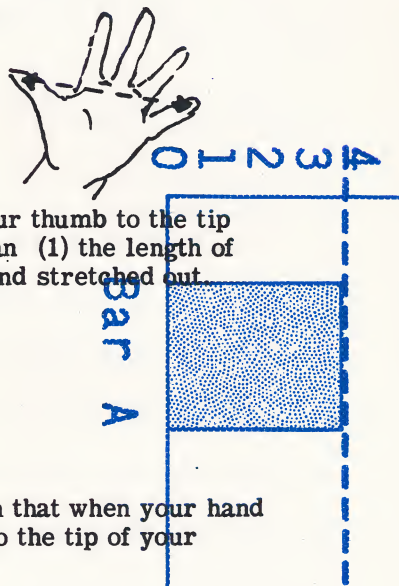
## Measurements series

Mm<sub>8</sub>

1. In this lesson we'll talk about your hand span, your thumb to your first joint, and your foot.

2. What is this measure? (hand span) (foot) (thumb to first joint)

3. Put your hand out like this. Look at the line from the tip of your thumb to the tip of your little finger. This is called your "span." Is your hand span (1) the length of your hand from the wrist to the finger tip, (2) the width of your hand stretched out.  
(1) (2)



4. The span of most hands is about 8 inches long. Does this mean that when your hand is stretched open, it is about 8 inches from the tip of your thumb to the tip of your first finger or your little finger? (first finger) (little finger)

5. Since the span of most hands is about 8 inches, what is the span of two hands? (about 16 inches) (about 4 inches)

6. Which of these describes an object that is longer than your hand span and shorter than your 2-hand span? (2 feet long) (between 8 and 16 inches long)

7. Which of these measures would be best to use to estimate the width of a desk top? (2-hand span) (thumb to first joint)

8. Which of these would be best to use to estimate the size of something 2 feet long? (stretch) (span) (height)

9. Your foot is about 12 inches long. Is your foot (1) smaller than a hand span, (2) or larger than a hand span, but smaller than a 2-hand span? (1) (2)
10. What can you use your foot as a measure for? (1) estimating how much floor space is needed for a refrigerator (2) estimating how high a doorway is (3) estimating the height of a tree (1) (2) (3)
11. Which of these measures would be best to use to estimate the length of a baseball bat? (foot) (height)
12. Your thumb is a good 1-inch measure. Measure your thumb from the end to the first joint. It should be about 1 inch, but it could be a little more. Which is correct? (1) You can find a 1-inch measure on your thumb. (2) Your thumb is always 1 inch long. (1) (2)
13. Which of these would be best to use to estimate the size of a paper clip? (span) (thumb to first joint)
14. Which is best to use as a measure for 1 inch? (stretch) (thumb to first joint) (pace)
15. What is the length of your thumb to the first joint? (8 inches) (12 inches) (1 inch)
16. What is the length of your hand span? (8 inches) (12 inches) (16 inches)
17. What is the length of your foot? (8 inches) (12 inches) (16 inches)
18. What is the length of your stretch? (16 inches) (2 feet) (equal to your height)
19. Which of these measures is the largest? (2-hand span) (height) (foot)
20. Which is the largest of these? (2-hand span) (thumb) (foot)
21. Which one of these is larger? (foot) (thumb)
22. Which is the smallest? (foot) (2-hand span) (thumb)
23. Which of these would you use to estimate the width of a window? (foot) (hand span) (height)
24. Which of these might you use to estimate the width of a room? (stretch) (pace) (both)
25. Which of these would you use to guess the size of a pair of scissors? (stretch) (span) (height)
26. Which of these would you use to guess the width of a sidewalk? (height) (pace)

27. Which of these would you use to guess the length of a cigarette? (thumb to first joint)  
(span)

28. Which of these might you use to measure the size of a table top? (2-hand span)  
(height) (neither)

## Practice Folder

# MATHEMATICS

## Measurements series

# Mm<sup>9</sup>

1. The word weight is used to tell how heavy something is. What can weight be measured in? (pounds) (inches)
2. Which of these would you do to guess how heavy something is? (1) See if it is as long as something else you know. (2) Compare its weight to the weight of something you know. (1) (2)
3. Here is a list of weights you should know. They can help you guess the weight of other things. They are all things you can lift. A carton of butter weighs one pound. One quart of milk or water in a cardboard container weighs 2 pounds. A 6-pack carton of king-size cola weighs 8 pounds. And a man's bowling ball weighs 16 pounds.
4. Follow these steps to estimate how heavy something is. Pick up the object you wish to estimate. In this example we use a box that weighs 8 pounds. Next, pretend that a weight you know is in your other hand. See if the weights "match". Will the weight of the butter be more or less than the 8-pound box? (more) (less)
5. The butter will weigh much less than the 8-pound box. Now think of another weight you know, and see if the weights match. Think "One quart of milk is 2 pounds." Too light.
6. Keep pretending to pick up weights you know until you find something as heavy as the object you are holding. Think of the weight of a bowling ball. Will it be more or less than the 8-pound box? (more) (less)
7. Think of the weight of the six-pack of cola. Will it be about the same as the box? (yes) (no)
8. Suppose you are shopping for 2 pounds of potatoes. Which of these weights would be the best to help you guess the weight of the potatoes? (six-pack of cola) (quart of milk)
9. Suppose you are going to mail a package. The cost of mailing a package has gone up for anything over 2 pounds. Which of these would you think about to help judge whether your package weighed more than 2 pounds? (six-pack of cola) (quart of water or milk) (bowling ball)



10. Which of these can you estimate that an average 2-pound school book weighs about the same as? (quart of milk) (2 pounds of butter) (either)
11. Which of these might you think about to help guess the weight of a 1-pound pair of roller skates? (carton of butter) (six-pack of cola)
12. Which of these would you think about to best help you choose a 16 to 18 pound Thanksgiving turkey? (six-pack of cola) (bowling ball)
13. Which of these is correct? (1) A man's bowling ball weighs about 16 pounds. (2) A quart of milk or water weighs about 2 pounds. (1) (2) (both)
14. Which of these is correct? (1) A six-pack weighs about 7 pounds. (2) A six-pack is heavier than a bowling ball. (1) (2) (both)
15. How much does a man's bowling ball weigh? (7 pounds) (12 pounds) (16 pounds)
16. How much does a carton of butter weigh? (1 pound) (2 pounds) (7 pounds)
17. How much does a six-pack of king-size cola weigh? (2 pounds) (7 pounds) (12 pounds)
18. How much does a quart of milk or water weigh? (1 pound) (2 pounds) (7 pounds)
19. You can guess the weights of things too heavy to lift if you know how much things of a similar size weigh. Use the following weights and sizes as guides. A bicycle weighs 45 pounds. A motor scooter weighs 200 pounds. A horse weighs about 1000 pounds. And a station wagon weighs about 4000 pounds. Which is the lightest? (horse) (motor scooter) (bicycle)
20. A motor scooter weighs about 200 pounds. You can estimate that a motorcycle weighs about which of these? (50 pounds) (100 pounds) (400 pounds)
21. The weight of a station wagon is about 4000 pounds. A Volkswagen is almost one-half the size of the station wagon. What can you estimate that a Volkswagen will weigh? (2000 pounds) (3000 pounds)
22. A station wagon weighs about 4000 pounds. How much will a compact car weigh? (2000 pounds) (3000 pounds)
23. A motor scooter weighs about 200 pounds. You can estimate that a portable sewing machine weighs about: (1) the same as a bicycle, (2) half as much as a motor scooter, (3) neither. (1) (2) (3)
24. Which of these is correct? (station wagon - 4000 pounds) (bicycle - 200 pounds)



25. Which of these is correct? (motor scooter - 100 pounds) (horse - 1000 pounds) (both)
26. Which one of these weighs about 45 pounds? (horse) (motor scooter) (bicycle)
27. Which one weighs about 200 pounds? (bicycle) (motor scooter) (horse)
28. Which weighs about 1000 pounds? (Volkswagen) (station wagon) (horse)
29. Which weighs about 4000 pounds? (station wagon) (compact car) (Volkswagen)
30. Complete this statement. "Use parts of your body to estimate how \_\_\_\_\_ something is." (heavy) (long)
31. Your stretch and your pace can be guides for guessing which of these? (length of a room) (size of a book)
32. Finish this sentence. "Comparing with something you know is a method of guessing \_\_\_\_\_. " (length) (weight) (both)
33. Which is correct? (six-pack weighs 10 pounds) (quart of milk weighs 2 pounds)

# MATHEMATICS

## Measurements series

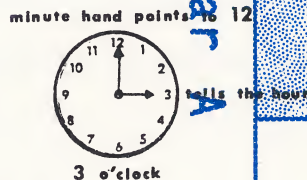
Mm 10

1. Clocks have two hands, a long hand and a short hand. The long hand on the clock is the minute hand, and the short hand is the hour hand. Are the hands of a clock the same length or different lengths? (same length) (different lengths)



2. Which hand is the minute hand? (the longer hand) (the shorter hand)

3. When the minute hand points to 12, the hour hand tells what hour it is. This clock shows 3 o'clock. Which hand points to three? (hour hand) (minute hand)



4. Which hand points to 12 on this clock? (hour hand) (minute hand)



5. What time is it according to this clock? (8 o'clock) (12 o'clock)

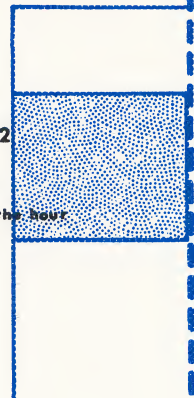


6. What times does this clock show? (11 o'clock) (12 o'clock)



0 1 2 3 4

Bar A



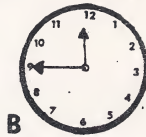
7. What time is it by this clock?  
(12 o'clock) (1 o'clock)



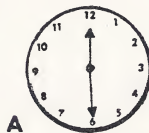
8. What time is it here? (12 o'clock) (5 o'clock)



9. Which clock shows 9 o'clock? (A) (B)



10. Which clock shows 6 o'clock? (A) (B)



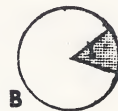
11. When the clock shows 4 o'clock, which hand points to 12? (long hand) (short hand)

12. Is the longer hand the minute hand or the hour hand? (minute hand) (hour hand)

13. One clock says 6 o'clock and one clock says 7 o'clock.  
How far did the hour hand move in one hour? (A) (B)



14. Which clock face shows the distance the hour hand moves between 2 o'clock and 5 o'clock? (A) (B)



15. Which clock shows the distance the hour hand moves between 11 o'clock and 1 o'clock? (A) (B)



16. When the hour hand moves the distance shaded on this clock, how many hours have passed? (12) (6) (3)



17. When the hour hand moves all the way around the clock face one time, how many hours have passed? (24) (8) (12)

18. The clock on your left shows 12 o'clock midnight. The middle clock shows the distance the hour hand has moved at 6 o'clock in the morning. What time does the third clock show? (12 o'clock noon) (12 o'clock midnight)



19. How many hours have passed between 12 o'clock midnight and 12 o'clock noon? (6) (12) (0)

20. These clocks show 12 o'clock noon, 6 o'clock in the evening and 12 o'clock midnight. How many hours have passed since 12 o'clock noon? (0) (6) (12)



21. There are 12 hours from 12 o'clock midnight to 12 o'clock noon, and 12 hours from 12 o'clock noon to 12 o'clock midnight. How many hours are in one day? (8) (24) (12)

22. How many times does the hour hand move around the clockface in 24 hours? (1 time) (2 times)

23. When a clock shows 12 o'clock, can you tell whether it is 12 o'clock noon or 12 o'clock midnight? (yes) (no)

24. When the hands of a clock show 7 o'clock, do you know whether it is 7 o'clock in the morning or 7 o'clock in the evening? (yes) (no)

25. When we mean 7 o'clock in the morning, we write the letters A M after the time, and when we mean 7 o'clock in the evening we write P M after it. What does 10 o'clock AM mean? (in the morning) (in the evening)

26. If it is 11 o'clock PM, what time of day is it? (morning) (evening)

27. Do you eat breakfast around 7 o'clock AM or PM? (AM) (PM)

28. You get out of school around 3 o'clock PM. Is it in the morning or in the afternoon? (morning) (afternoon)



29. Do you go to bed around 10 o'clock AM or PM? (AM) (PM)

30. AM means before noon, the time from 12 o'clock midnight to 12 o'clock noon. PM means after noon, the time from 12 o'clock noon to 12 o'clock midnight. How many "AM" hours are there? (12) (6)

31. How many "PM" hours are there? (12) (6)

32. 12 o'clock midnight is AM, before noon. What is 12 o'clock noon? (AM) (PM)

33. As the hour hand moves from 8 o'clock to 9 o'clock, the minute hand goes around the clockface one time. When the minute hand has moved half way around the clockface, we say it is half past 8. What number does the minute hand point to at half past 8? (12) (6) (8)

34. What time does this clock show?  
(half past 3) (6 o'clock)



35. What time is it here?  
(half past 6) (half past 10)



36. When the long hand points to 12, and the short hand points to 6, what time is it?  
(half past 12) (6 o'clock)

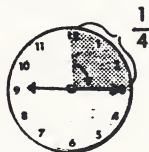
37. Which clock shows half past 4?  
(A) (B) (C)



38. What number does the minute hand point to at 9 o'clock? (6) (9) (12)

39. What number does the minute hand point to at half past two? (2) (6) (12)

40. When the minute hand has moved one quarter of the way around the clockface, we say it is a quarter past the hour. What time is it by this clock?  
(a quarter past 9) (a quarter past 6)



41. When the long hand points to 3, and the short hand points to 6, what time is it?  
(a quarter past 3) (a quarter past 6)

42. Which clock shows a quarter past one?  
(A) (B) (C)



43. What number does the minute hand point to at a quarter past the hour? (6) (3) (12)

44. When the minute hand points to 9, and the hour hand points to 5, we say it is a quarter to five. Does the minute hand make one fourth or one half of a turn before it is exactly 5 o'clock? ( $\frac{1}{4}$ ) ( $\frac{1}{2}$ )

45. What time is it when the minute hand is at 9, and the hour hand is at 2? (a quarter past 2) (a quarter to 2)

46. Which clock shows a quarter to six?  
(A) (B) (C)



47. What number does the minute hand point to at a quarter to four? (9) (12) (4)

48. When the minute hand goes around the clockface one time, how much time has passed?  
(1 minute) (1 hour) (1 day)

# MATHEMATICS

## Measurements series

# Mm

11

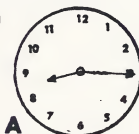
- Which hand of a clock is the hour hand? (short hand) (long hand)
- Which is the minute hand? (short hand) (long hand)
- When it is 2 o'clock, which hand points to 12? (minute hand) (hour hand)
- What number does the minute hand point to at a quarter past 10? (6) (3) (12)
- Which clock shows half past 4? (A) (B)
- Which clockface shows a quarter to 8? (A) (B)
- Which hand goes around the clockface one time in an hour? (hour hand) (minute hand)
- To tell time accurately, an hour is divided into 60 parts, called minutes. Each minute is shown by a mark on the clockface. There are five minutes between the 12 and the 1. How many are there between the 1 and the 2? (1) (5) (10)
- When the minute hand moves from five to six, how many minutes have passed? (5) (30) (10)
- When the minute hand moves from the 9 to the 11, how much time has passed? (5 minutes) (10 minutes)
- How many minutes have passed when the minute hand moves from 9 to 12? (10) (15) (20)
- 15 minutes is a quarter of an hour. What is one-fourth of 60? (20) (15) (30)



A



B



A



B

OLNWA



13. When the minute hand moves from 2 to 6, how many minutes have passed? (15) (20)
14. When the minute hand moves from 12 to 6, how many minutes have passed? (30) (15) (60)

15. 30 minutes is half an hour. What does one-half times 60 equal? (120) (30)

16. Here is another way to write 30 minutes past nine: 9:30. It is read nine 30. The number to the left of the colon is the hour. Is the number to the right of the colon the number of minutes past the hour? (yes) (no)

17. Which of these is the correct way to write four 30? (30:4) (4:30)

18. How do you write seven 45? (7:45) (45:7)

19. Which is another way to write 20 minutes past one? (120) (1:20) (20:1)

20. Which number is the hour: the one to the left or to the right of the colon? (left of colon) (right of colon)

21. When the minute hand points to 3, and the hour hand points to 6, what time is it? (3:30) (6:15)

22. How do you write this time? (6:05) (6:50)



23. Do these mean the same: 6 o'clock, 6:00? (yes) (no)

24. Which clock shows the earlier time? (A) (B)



25. Which one of these is the earliest? (A) (B) (C)



26. Choose the clock that shows the later time. (A) (B)





27. Which is latest here? (A) (B) (C)



28. How many minutes difference do these clocks show? (3) (6) (5)



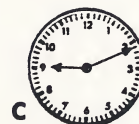
29. What is the difference between these two clocks? (8) (10) (6)



30. Find the difference between these clocks.  
(25 minutes) (35 minutes)



31. Which clock shows 12 minutes later than clock A? (B) (C)



32. Which of these is 13 minutes later than 4:25? (4:12) (4:38)

33. Which of these is 18 minutes later than 7:57? (8:15) (8:18)

34. Which is three minutes earlier than 7:55? (7:58) (7:52)

35. Which is 17 minutes later than 4:15? (4:28) (4:32)

36. What time is 6 minutes later than 12:35? (11:29) (12:41) (1:19)

37. What time is 13 minutes earlier than 6:05? (5:52) (6:18)

38. If a clock shows 2:15, how many minutes until 2:40? (15) (25) (30)

39. If a clock shows 5:16, how many minutes until 6:15? (1) (59) (99)

40. How many minutes are there from 8 o'clock to 9 o'clock? (30) (60) (80)

41. How many minutes are in one half hour? (30) (60) (20)
42. How many minutes are there in one quarter hour? (10) (15) (20)
43. How much time does it take the minute hand to move from 2 to 5? (15 minutes)  
(30 minutes)
44. How much time does it take the minute hand to move from 11 to 3? (40 minutes)  
(20 minutes)
45. Is 8 o'clock AM before noon or after noon? (before noon) (after noon)
46. What is 6 o'clock in the evening? (AM) (PM)
47. What is 12 o'clock noon? (AM) (PM)

# Practice Folder

## MATHEMATICS

### Measurements series

# Mm

 12

1. You have learned that each hour is divided into parts, called minutes. How many minutes are in one hour? (60) (100) (50)
2. How many minutes are there in half an hour? (50) (30) (25)
3. How many minutes are in a quarter hour? (10) (20) (15)
4. When it is 17 minutes past eight, is it about a quarter past eight or about half past eight? (a quarter) (half)
5. When it is 35 minutes past one, is it about half past one or about a quarter to two? (half past 1) (a quarter to 2)
6. When it is 55 minutes past eleven, is it about a quarter to 12 or about half past 11? (a quarter to 12) (12:00)
7. You can read this time two ways! 2:40. It's either 40 minutes past two or 20 minutes to three. Do they both mean the same thing? (yes) (no)
8. The time is 50 minutes past nine. How many minutes to ten is it? (15) (10) (5)
9. At 45 minutes past four, how many minutes to five is it? (20) (5) (15)
10. Look at this clock, then fill in the blank with the correct number of minutes. "\_\_\_\_\_ minutes to 12" (35) (25) (20)
11. Now fill in this blank with the correct hour. "5 minutes to \_\_\_\_\_" (6) (5)



12. At 59 minutes past one, how many minutes to two is it? (10) (1)
13. How do you write the time for 20 minutes to two in the morning? (1:40 AM) (1:40 PM)
14. Which time means five minutes to seven in the evening? (7:05 PM) (6:55 PM)
15. Which means 20 minutes to 2 in the afternoon? (1:40 AM) (1:40 PM) (2:20 PM)
16. How would you write the time for 10 minutes before noon? (11:50 PM) (11:50 AM)
17. How many hours difference is there between 4:00 and 9:00? (7) (5) (25)
18. How many hours difference is there between one o'clock AM and ten o'clock AM? (9) (11)
19. What is the difference from 3 o'clock PM to 7 o'clock PM? (10) (4)
20. How many hours difference between 8:00 AM and 1:00 PM? (7) (5) (4)
21. What is the difference from 11:30 AM to 3:00 PM? (3 hours) (3 1/2 hours) (4 1/2 hours)
22. How many hours are there from 9:30 PM to five AM? (7 1/2) (4 1/2)
23. This is a 24-hour clock. It has 24 divisions instead of 12. Midnight is at the zero mark. You read one o'clock in the morning as zero one hundred hours, and two o'clock as zero two hundred hours. How do you write eight o'clock in the morning? (8:00) (0800)



24. 12 o'clock noon is 12 hundred hours; one o'clock in the afternoon is 13 hundred hours. How is three PM written? (0300) (1500) (03:00)
25. Which means eleven o'clock in the evening on a 24-hour clock? (1100) (2300)
26. Does zero six three zero (0630) hours mean 30 minutes after six before noon or after noon? (before noon) (after noon)
27. Is zero four four five (0445) hours AM or PM? (AM) (PM)
28. Is one eight one five (1815) hours AM or PM? (AM) (PM)
29. What time does two two three zero (2230) hours mean? (2:30 AM) (10:30 PM) (12:30 PM)



30. What time is 1600 hours? (4:00 AM) (4:00 PM)

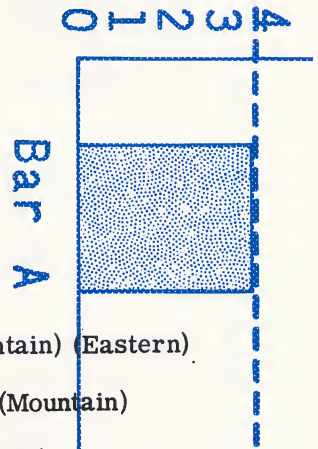
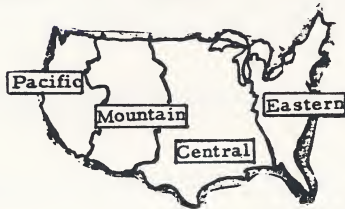
31. Is it necessary to write the letters AM and PM when you are using a 24-hour clock?  
(yes) (no)

# MATHEMATICS

## Measurements series

Mm<sup>13</sup>

1. The North American continent is divided into time zones; the Eastern, Central, Mountain, and Pacific time zones. How many time zones are in the continental United States? (4) (3) (5)



2. Which time zone is farthest East? (Pacific) (Eastern) (Central)
3. Which zone is farthest West? (Pacific) (Mountain) (Central)
4. Which zone is directly East of the Pacific time zone? (Central) (Mountain) (Eastern)
5. Which is directly West of the Eastern time zone? (Pacific) (Central) (Mountain)
6. Which zone is closest to the Pacific zone? (Central) (Eastern) (Mountain)
7. Which is closest to the Eastern zone? (Central) (Mountain) (Pacific)
8. Which zone is New York City in? (Central) (Eastern)



9. Which is Los Angeles, California in? (Eastern) (Pacific) (Central)

10. Which zone is Denver, Colorado located in?  
(Mountain) (Pacific) (Central)



11. Which zone is Chicago, Illinois in?  
(Pacific) (Mountain) (Central)

12. Each time zone differs one hour from the time zone next to it. If it is 6 o'clock in the Eastern time zone, it is 5 o'clock in the Central time zone, 4 o'clock in the Mountain zone and 3 o'clock in the Pacific time zone. Does it get earlier or later as you travel from East to West? (earlier) (later)

13. Since it gets earlier as you travel West, do you add or subtract an hour for each time zone? (add) (subtract)

14. If it is 12 o'clock in the Eastern time zone, what time is it in the Pacific time zone?  
(3:00) (9:00) (11:00)

15. How many hours difference are there between New York and Los Angeles?  
(2) (3) (4)

16. How many hours difference are there between Mountain Standard time and Pacific Standard time? (0) (2) (1)

17. How many hours difference are there between Central Standard time and Pacific Standard time? (2) (1) (3)

18. What is the difference between Eastern time and Mountain time? (3 hours)  
(2 hours) (1 hour)

19. What is the difference between Mountain time and Central time? (2 hours)  
(0 hours) (1 hour)

20. If you travel from West to East, does it get earlier or later? (earlier) (later)

21. If it is 2 o'clock in the afternoon in California, it is 3 o'clock in Colorado, 4 o'clock in Illinois, and 5 o'clock in New York. As you travel from West to East, do you add or subtract an hour for each new time zone? (add) (subtract)

22. If it is 4 o'clock in the Pacific zone, what time is it in the Mountain zone?  
(3 o'clock) (5 o'clock) (6 o'clock)

23. When it is 7 o'clock in the Central zone, what time is it in the Eastern zone?  
(9 o'clock) (6 o'clock) (8 o'clock)

24. When it is 1 o'clock in the Pacific zone, what time is it in the Central zone?  
(3 o'clock) (11 o'clock) (2 o'clock)
25. Is it the same time in every city within a time zone? (yes) (no)
26. When it is 7 o'clock in New York City, it is also 7 o'clock in Washington, D. C.,  
and Miami, Florida, since they are all in the Eastern time zone. Chicago, Dallas,  
and New Orleans are in the Central zone. Is it 6 o'clock in these three cities? (yes) (no)
27. If it is 3 o'clock in Chicago, Illinois, is it also 3 o'clock in Denver, Colorado,  
and Albuquerque, New Mexico? (yes) (no)
28. If it is 9 o'clock in San Francisco, California, what time is it in Seattle,  
Washington? (9:00) (8:00)
29. If you travel from Chicago to New Orleans, will you need to reset your watch?  
(yes) (no)
30. If you travel from New York City to Denver, will you set your watch forward  
two hours, or backward two hours? (forward) (backward)
31. Which way would you reset your watch travelling from Philadelphia, Pennsylvania  
to Dallas, Texas? (forward) (backward)
32. Which way would you reset your watch travelling from Los Angeles to Chicago?  
(forward) (backward)
33. Which way would you reset your watch travelling from Denver to Boston?  
(forward) (backward)
34. Between which two cities would you NOT need to change your watch?  
(Seattle, Los Angeles) (Miami, Houston)
35. Between which of these two cities would you change your watch one hour?  
(Boston, Denver) (Chicago, New York)
36. Between which of these cities are there three hours difference? (Seattle, Boston)  
(Denver, Chicago) (Omaha, Miami)
37. Between which cities is there two hours difference? (Denver, Chicago) (Denver,  
New York) (Chicago, New York)
38. If it is 6 o'clock in New York, what time is it in Chicago? (6:00) (5:00) (7:00)
39. What time is it in Denver if it is 8 o'clock in Washington, D. C. ? (6:00) (10:00)
40. What time is it in Los Angeles if it is 5 o'clock in Denver? (6:00) (5:00) (4:00)



41. What time is it in Albuquerque, New Mexico, if it is 8 o'clock in Denver?  
(7:00) (8:00) (9:00)
42. What time is it in Seattle if it is 4 o'clock in Dallas? (2:00) (5:00) (6:00)
43. What time is it in Albuquerque if it is 11 o'clock in New Orleans? (11:00) (10:00)  
(12:00)
44. In which city is it 7 o'clock if it is 4 o'clock in Seattle? (Albuquerque) (Chicago)  
(Miami)
45. In which city is it 11 o'clock if it is 9 o'clock in San Francisco? (Denver)  
(New Orleans) (Boston)
46. In which city is it 1 o'clock if it is 12 o'clock in Denver? (Salt Lake City)  
(Omaha) (Miami)
47. In which city is it 6 o'clock if it is 5 o'clock in Chicago? (Denver) (New Orleans)  
(Boston)
48. Where is it two hours later than Denver? (Miami) (Boston) (both)
49. Where is it one hour earlier than New Orleans? (Denver) (Philadelphia)
50. Is Chicago one hour earlier or later than New York? (earlier) (later)
51. Is Albuquerque one hour earlier or later than Seattle? (earlier) (later)

# MATHEMATICS

## Measurements

## series

# Mm

14

1. How many hands are on this clock?

(1) (2) (3)



2. The red hand is called the second hand. It goes from one small mark to the next in one second. How many small spaces does the second hand pass over as it goes from one numeral to the next? (5) (1) (10)

3. How many seconds does it take the second hand to go from one numeral to the next? (5) (1) (10)

4. How many seconds does this shaded part show? (7) (10) (12)



5. The second hand goes around the clockface one time in a minute. How many seconds are in one minute? (30) (100) (60)

6. How many times will the second hand go around in three minutes? (3) (30)

7. How many times will the second hand go around in 60 minutes? (10) (60) (600)

8. Which hand moves faster? (second hand) (minute hand)

9. This clock shows ten minutes past eight. The red second hand is at four. How many seconds is it from the 12 to the four? (4) (20)



10. It is ten minutes and how many seconds past eight o'clock? (4) (20)

11. If the second hand is at nine, how many seconds is it from the 12 to the nine? (45) (9)

0 1 2 3 4

Bar

A

MM

12. What time does this clock show?  
minutes and seconds past \_\_\_\_\_.  
(35, 15, 11) (15, 35, 11) (11, 35, 3) \_\_\_\_\_.



13. How many seconds will it take the second hand to go from seven to 12? (5) (25) (20)  
14. How many minutes and how many seconds is it to five o'clock? (10, 25) (25, 10)

15. What time does this clock show? \_\_\_\_\_ minutes  
and \_\_\_\_\_ seconds past 9. (23, 30) (30, 23)



16. To add five minutes 20 seconds to ten minutes 15 seconds, first add the seconds, then, second, add the minutes. What is the correct sum? (15, 5) (15, 35)

17. Add 36 minutes 13 seconds and 2 minutes and 42 seconds the same way. What is the answer? (34, 31) (38, 55) (34, 45)

18. Sometimes when you add you must regroup. 45 seconds plus 20 seconds equals 65 seconds. Since 60 seconds equal one minute, we regroup the answer and write one minute five seconds as the correct sum.

19. Regroup 180 seconds. (2 minutes 60 seconds) (3 minutes)

20. Add and regroup the following: 15 minutes 30 seconds and 12 minutes 45 seconds.  
(28 minutes, 15 seconds) (27 minutes, 15 seconds)

21. Is it necessary to regroup 35 minutes 59 seconds? (yes) (no)

22. We can abbreviate, or shorten, the words hours, minutes, and seconds to h-r period for hours, m-i-n period for minutes, and s-e-c period for seconds. Does abbreviate mean to shorten or lengthen? (shorten) (lengthen)

23. Add the following on your paper and regroup if necessary. 3 hours 42 minutes 11 seconds + 1 hour 50 minutes 19 seconds. (5, 32, 30) (4, 92, 30)

24. Add the seconds first; you didn't need to regroup. Add the minutes. After you regroup 92 minutes, you have one hour 32 minutes. Add the hours, including the one you regrouped. Be sure you understand the steps.

25. Add these amounts on your paper and regroup if necessary. 57 minutes 38 seconds plus 5 minutes 53 seconds. (0, 73, 31) (1, 3, 31)

26. You should have regrouped the seconds, then the minutes, to one hour, three minutes, 31 seconds. Check your work.

27. Which do you add first in a problem? (hours) (minutes) (seconds)

28. You subtract time in the same order you add. First subtract the seconds, then the minutes. Which answer is correct for the following problem: 14 minutes 23 seconds minus 9 minutes 6 seconds? (5, 17) (6, 19)

29. Subtract these amounts: 8 minutes 47 seconds minus 5 minutes 13 seconds. What is the answer? (3, 24) (3, 34)

30. Sometimes you must regroup before you can subtract. You can't subtract 40 seconds from 30 seconds, so borrow one minute, or 60 seconds, from ten minutes. Now subtract 40 seconds from 90 seconds. Then subtract eight minutes from nine minutes. Which answer is correct? (1, 40) (1, 50)

$$\begin{array}{r} 9 \qquad 90 \\ 10 \text{ minutes} \quad 30 \text{ seconds} \\ - 8 \text{ minutes} \quad 40 \text{ seconds} \\ \hline ? \text{ minutes} \quad ? \text{ seconds} \end{array}$$

31. Which is the correct way to regroup 30 minutes 15 seconds? (20, 75) (29, 75) (29, 65)

$$\begin{array}{r} 30 \text{ minutes} \quad 15 \text{ seconds} \\ - 12 \text{ minutes} \quad 25 \text{ seconds} \\ \hline \end{array}$$

32. Which is the correct answer for the problem above? (17, 50) (18, 50)

33. Regroup and work this subtraction problem. (10, 40) (9, 40) (10, 65)

$$\begin{array}{r} 41 \text{ minutes} \quad 25 \text{ seconds} \\ - 31 \text{ minutes} \quad 45 \text{ seconds} \\ \hline \end{array}$$

34. Which of these problems has been worked correctly? (1) (2)

$$\begin{array}{r} (1) \quad 5 \text{ hours } 16 \text{ minutes} \\ - 3 \text{ hours } 27 \text{ minutes} \\ \hline 1 \text{ hour } 49 \text{ minutes} \end{array}$$

$$\begin{array}{r} (2) \quad 4 \text{ hours } 27 \text{ minutes} \\ - 2 \text{ hours } 38 \text{ minutes} \\ \hline 1 \text{ hour } 89 \text{ minutes} \end{array}$$

35. Which must be regrouped before it is subtracted? (1) (2)

$$\begin{array}{r} (1) \quad 40 \text{ minutes } 40 \text{ seconds} \\ - 39 \text{ minutes } 39 \text{ seconds} \\ \hline \end{array}$$

$$\begin{array}{r} (2) \quad 20 \text{ minutes } 20 \text{ seconds} \\ - 19 \text{ minutes } 29 \text{ seconds} \\ \hline \end{array}$$



36. Is each minute divided into 60 seconds? (yes) (no)

37. Which is shortest? (hour) (minute) (second)

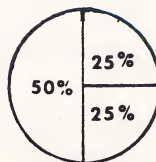
# MATHEMATICS

## Measurements series

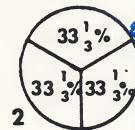
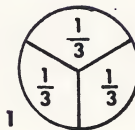
# Mm

15

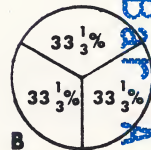
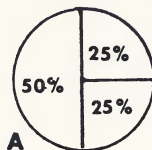
1. We used fractions to show the parts of a circle graph in the last lesson. A second way to show the parts of a circle is by using percents like this.



2. Which of these circle graphs uses percents to show the parts? (1) (2)

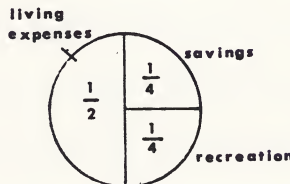


3. When the parts of a circle graph are shown in percents, the parts must add up to 100%. In graph (A) 50% plus 25% plus 25% equals 100%. Do the percents in graph (B) add up to 100%? (yes) (no)

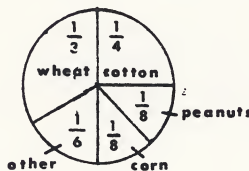


4. Which is correct? (Fractions in circle graphs add up to 1) (percents in circle graphs add up to 100) (both)

5. We'll use the parts of the circle graph to find how much money is spent for each item. For living expenses, one-half of \$600 equals \$300. And for recreation, one-fourth of \$600 equals \$150. Which of these is the amount spent for savings? (\$300) (\$150)



6. Farm income for July, 1967 is shown in this circle graph. What is the total income from all crops? (\$1/3 million) (\$24 million)



Total income  
from all crops  
\$24 million

7. Referring to the farm income graph above, what is the total income from peanuts? (\$3 million) (\$6 million)

8. What is the total income from wheat? (\$6 million) (\$8 million)

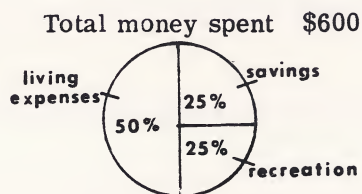
9. What is the total income from cotton? (\$8 million) (\$6 million)

10. What is the total income from corn? (\$3 million) (\$8 million)

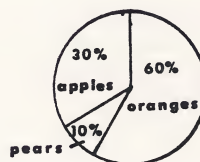
11. What is the total income from wheat and cotton? (\$14 million) (\$16 million)

12. What is the total income from corn and peanuts? (\$6 million) (\$5 million)

13. We follow the same steps when the parts of the circle graph are shown as percents. Remember 50% is the same as 50 hundredths and 25% is 25 hundredths: Living expense is \$600 times 50 hundredths which equals \$300. And for recreation, \$600 times 25 hundredths equals \$150. What is the amount saved? (\$300) (\$150) (\$400)



14. This circle graph shows income from fruit crops. What is the total income from fruit crops? (\$6000) (\$5000)



Total Income \$6000

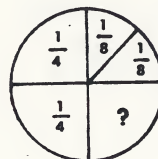
15. What is the income from oranges? (\$360) (\$3600)

16. What is the income from apples? (\$4000) (\$5000) (\$1800)

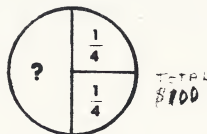
17. What is the income from pears? (\$6000) (\$600) (\$60)

18. What is the income from apples and oranges? (\$5400) (\$6000)

19. This circle graph has an unknown part. You know that the fractions must add up to 1. So find what fraction you need to add to the others to get 1. First change  $\frac{1}{4}$  to  $\frac{2}{8}$ . How many 8ths are needed to add up to 1? ( $\frac{4}{8}$ ) ( $\frac{2}{8}$ )



20. Which of these shows the correct unknown part for this graph? ( $1/4 + 1/4 + 1/2 = 1$ )  
( $1/4 + 1/4 + 1/4 = 1$ )

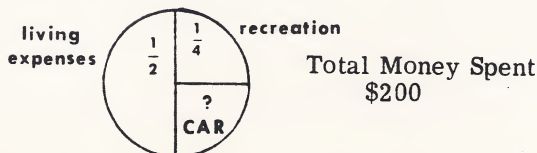


21. How much money does the unknown part of the circle graph stand for? (\$50) (\$25)

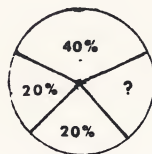
22. We know the parts of the income spent for recreation and food. How much money is spent for rent? (\$500) (\$200)



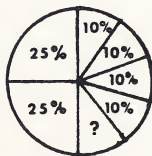
23. We know what part of the income was spent for living expenses and recreation. How much money is spent on the car? (\$100) (\$50)



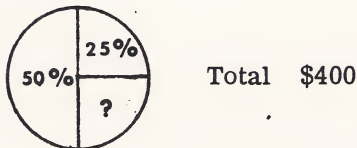
24. Three of the 4 parts of this circle graph are given in percents. Now find the unknown part of the graph. Is it 20% or 40%? (20%) (40%)



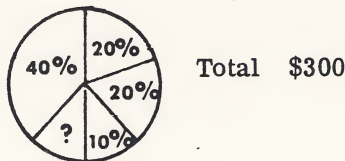
25. Find the unknown part of this graph. (20%) (10%)



26. What does the unknown part of this circle graph stand for? (\$100) (\$200)

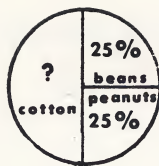


27. What does this unknown part stand for? (\$60) (\$30)





28. How much money is made from cotton?  
(\$4000) (\$3000) (\$6000)



Total Money  
Made \$6000

29. What kind of graph shows the parts of something that make up the whole?  
(fraction graph) (circle graph)

30. When the parts of a circle graph are shown as fractions, what must the parts add up to? (1) (100%)

31. When the parts of a circle graph add up to 100%, what are the parts? (fractions) (percents)

# MATHEMATICS

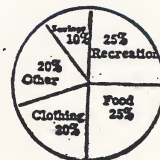
## Measurements series

Mm<sub>16</sub>

1. Here is a list of how Susan spends her money: Food \$.25; Clothing \$.20; Savings \$.10; Other \$.20; Recreation \$.25.

2. Now we'll show the same information in a table. Another way to present information is by a circle graph. Does the circle graph show the actual money spent? (yes) (no)

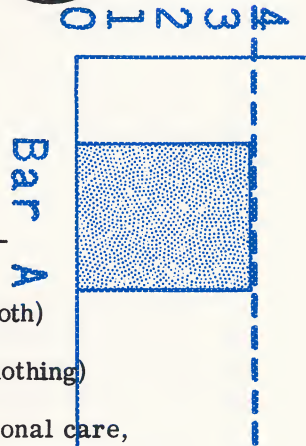
Recreation	\$.25
Food	.25
Clothing	.20
Savings	.10
Other	.20



3. What is the sum of the percents in a circle graph? (100%) (90%) (50%)

4. Let's see how we can draw a circle graph from a table of data. This table shows how Susan spends each dollar of her allowance. How much does she spend on clothes? (\$20) (\$.20) (\$.25)

Recreation	\$.25
Food	.25
Clothing	.20
Savings	.10
Other	.20
Total	\$1.00



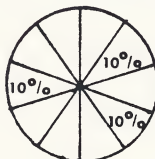
5. On which item does she spend the most money? (recreation) (food) (both)

6. In which item would school supplies be included? (savings) (other) (clothing)

7. The item titled "other" includes school supplies, transportation, personal care, and any item too small to show on the table.

8. To decide how much of the circle we should mark off for each item, let's change the money spent to percents. 25 cents out of a dollar, or 100 cents, is 25% for recreation and also for food. Ten cents out of a dollar is 10% for savings. What percent is spent on clothing? (20) (200) (.20)

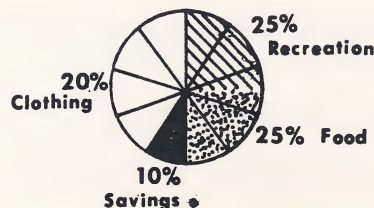
9. Let's mark off the circle. We'll divide the circle into ten parts. Each part represents ten percent. How much does the whole circle represent? (40%) (100%) (110%)



10. Into how many equal parts would we divide the circle if we wanted each part to represent 50%? (10) (5) (2)

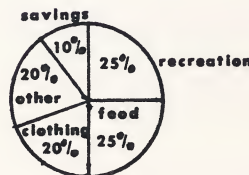
11. Into how many equal parts would we divide the circle if we wanted each part to represent 25%? (4) (2) (8)

12. Now let's mark off 25% for recreation. We color two and a half parts, since each part is ten percent. We color another two and a half, or 25%, for food. One part is for savings. How many parts should be for clothing? (1) (2) (4)



13. The remaining two are for **other** expenses. Have we used all ten parts of the circle? (yes) (no)

14. Does this graph show the actual money she spends? (yes) (no)



15. We must multiply the percent times her total allowance. Suppose Susan received five dollars allowance. To find out how much she spent for savings, multiply ten percent times five dollars. She put 50 cents into her savings. How much did she spend on food? (\$1) (\$1.25)

16. What did she spend for clothing? (\$1) (\$1.25) (.75)

17. If we add up the money she spent for recreation, food, clothing, savings, and other expenses, what is the sum? (\$4.75) (\$5)

18. Suppose Ann receives four dollars allowance. According to the graph above, how much would she spend on recreation? (\$1.25) (1) (\$1.50)

19. How much does she spend on food? (\$1) (\$1.50) (\$1.25)

20. How much for "Other" expenses? (.75) (.80) (\$1)

21. What is the total money Ann spent? (\$5) (\$4) (\$2.60)

22. We can make another kind of graph called a Divided-Bar graph. Let's use this table of information on Monthly Family Expenses to make a divided-bar graph. It shows how a family spends 100 dollars each month. What per cent is spent on food? (40%) (400%) (4%)

Food	\$40
Shelter	25
Clothing	15
Savings	10
Recreation	5
Other	5
Total	\$100

23. What percent is for savings?  
\$10 (10) (\$100)

Food	\$40
Shelter	25
Clothing	15
Savings	10
Recreation	5
Other	5
Total	\$100

24. Which expense was fifteen percent of the total? (savings) (shelter) (clothing)

25. Which was 25%? (recreation) (shelter) (food)

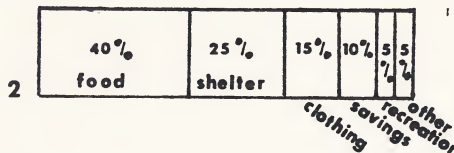
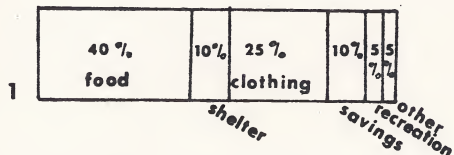
26. How much were "Other" expenses? (\$5) (\$10) (\$50)

27. What is the total percent for all expenses? (95%) (80%) (100%)

28. We can divide our bar into parts. If we divide the bar into 20 equal parts, what percent will each part represent? (5) (20) (10)



29. Mark off each item. Which bar is marked correctly? (1) (2)

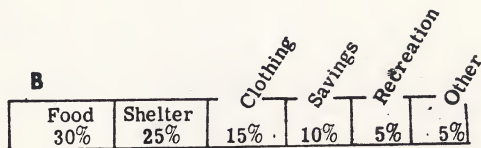
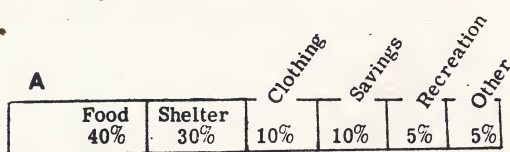


30. If the total family expenses were 500 dollars, how much was spent for shelter? (\$100) (\$125) (\$200)

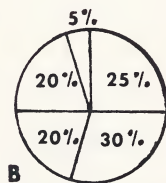
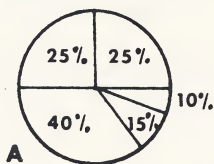
31. How much was spent for recreation? (\$25) (\$10) (\$250)



32. How much was spent for food? (\$150) (\$100) (\$200)
33. What is the total amount spent? (\$450) (\$550) (\$500)
34. Which is larger? (money spent for clothes) (money for savings)
35. Is more money spent for food or for shelter? (food) (shelter)
36. Which graph is divided correctly? (A) (B)



37. Which of these is correctly divided?  
(A) (B)



38. Which shows how much money is actually spent? (circle graph) (table)  
(divided-bar graph)